

Appl. No. 10/519,603; Docket No. CH02 0022 US  
Amdt. dated, December 12, 2005  
Response to Office Action of October 6, 2005

**Amendments to the Claims**

1. (*Currently Amended*) A circuit arrangement having a sigma-delta converter (2) for converting an analog input signal into a digital output signal, wherein the sigma-delta converter (2) comprises a loop filter (22) having a filter input to which an input line (21) for the input signal is connected and having a filter output, a quantizer (23) having a quantizer input that is connected to the filter output and having a quantizer output to which an output line (24) for the output signal is connected, and a feedback loop (25) to feed the output signal back to the input signal, and the circuit arrangement has a dither-signal line (27) that is suitable for additionally applying to the quantizer input, as a dither signal, a signal that is available in the circuit without a separate dither generator. ~~but is not specifically generated for this purpose.~~
2. (*Previously Presented*) A circuit arrangement as claimed in claim 1, wherein the circuit comprises a second sigma-delta converter (2') having a second output line (24'), and the dither-signal line (27.1) connects the second output line (24') to the quantizer input of the first sigma-delta converter (2).
3. (*Previously Presented*) A circuit arrangement as claimed in claim 1, wherein the circuit arrangement comprises a digital-to-analog converter (5), preferably an FIR digital-to-analog converter, and the dither-signal line (27.3) connects an input line of the digital-to-analog converter (5) to the quantizer input of the first sigma-delta converter (2).
4. (*Previously Presented*) A circuit arrangement as claimed in claim 1, wherein the circuit arrangement has means (4) for noise shaping that are connected upstream of the dither-signal line (27.3).
5. (*Previously Presented*) A circuit arrangement as claimed in claim 1, wherein the quantizer (23) comprises a comparator.

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6. (*Previously Presented*) A circuit arrangement as claimed in claim 1, wherein the feedback loop (25) comprises a digital-to-analog converter (26).

7. (*Original*) A method for the sigma-delta conversion of an analog input signal into a digital output signal comprising the following method steps:

- (a) filtering of the input signal, thereby producing a filtered signal;
- (b) adding together of the filtered signal and a dither signal, thereby producing a sum signal, what is used as the dither signal being a signal that is available in the circuit but is not specifically generated for this purpose;
- (c) quantizing of the sum signal, thereby producing the output signal; and
- (d) feeding- back of the output signal to the input signal.

8. (*Original*) A method as claimed in claim 7, wherein an output signal obtained by the sigma-delta conversion of a different input signal is used as the dither signal.

9. (*Original*) A method as claimed in claim 7, wherein an input signal to a digital-to-analog converter (5), preferably an FIR digital-to-analog converter, is used as the dither signal.

10. (*Previously Presented*) A method as claimed in claim 7, wherein a signal containing wide-band noise, preferably a noise-shaped signal, is used as the dither signal.